CLAIMS

1. A vehicle comprising:

a body onto which at least one rider rides;

a frame to which slide tracks are mounted;

a belt mounted about said slide tracks and driven to provide movement for said vehicle; and

a suspension system including at least one fluid actuated device operatively connecting said frame to said body adjustable at any time for substantially insulating said vehicle body from forces acting on said frame when said vehicle is in movement to thereby effecting an optimal cushioned ride for said rider.

2. The vehicle of claim 1, wherein said fluid actuated device comprises a gas cylinder which movement is driven by compressed air or gas.

3. The vehicle of claim 1, wherein said fluid actuated device comprises a cylinder driven by hydraulic fluid and/or other incompressible fluids.

4. The vehicle of claim 1, further comprising:

a pair of skis movably attached to said vehicle body for providing said rider controlled steered movement of said vehicle, at least one fluid actuated cylinder connecting each of said skis to said body, said at least one fluid actuated device

adjustable at any time to effect a stabilized movement for said one ski independent of the other of said skis.

5. The vehicle of claim 2, further comprising:

a shock absorber working in cooperation with an air or gas store which volume is varied by the amount of air or gas fed thereto.

6. The vehicle of claim 2, further comprising:

valve means for controlling the amount of air or gas provided to said gas cylinder.

7. The vehicle of claim 3, further comprising:

valve means for controlling the amount of fluid provided to said cylinder.

8. The vehicle of claim 1, further comprising:

means responsive to at least the weight of said rider riding on said body for moving said body and said slide tracks relative to each other to provide the optimal cushioned ride for said rider.

9. The vehicle of claim 1, further comprising:

means for sensing the forces acting on said frame relative to said body and automatically adjusting said fluid actuated devices to control the operation of said suspension system.

10. The vehicle of claim 1, further comprising:

sensor means responsive to at least the weight of said rider supported by said body; and

processor means communicatively connected to said sensor means for receiving signals therefrom representative of at least the weight of said rider, said processor means further communicatively connected to said fluid actuated devices so that, in receipt of the signals from said sensor means, said processor means sends a command signal to adjust the stiffness of said fluid actuated devices to thereby provide the optimal cushioned ride for said rider.

11. The vehicle of claim 1, further comprising:

means for controlling the operation of said suspension system to variably adjust, at different positions, the distance separating said frame from said slide tracks.

12. The vehicle of claim 1, wherein said suspension system is actuated to raise or lower said vehicle body relative to said slide tracks.

13. The vehicle of claim 1, wherein said fluid actuated device comprise two fluid driven cylinders working cooperatively with each other to provide a variable optimal distance between said body and said slide tracks for each rider of said vehicle.

14. The vehicle of claim 13, wherein said two fluid actuated cylinders are individually actuated.

15. The vehicle of claim 1, further comprising:

activating means responsive to said rider for controllably adjusting said fluid actuated devices.

16. The vehicle of claim 1, further comprising:

adjusting means for automatically adjusting said fluid actuated devices to vary the distance separating said frame and said slide tracks without requiring any interaction on the part of said rider.

17. The vehicle of claim 1, further comprising:

an antilock braking system for providing enhanced traction for said vehicle.

18. In a snowmobile having a body onto which at least one rider rides, said body being coupled to a frame supported by slide tracks, a system for maintaining a distance between said body and said slide tracks to provide optimal riding comfort for said rider, comprising:

at least one fluid actuated device operatively interposed between said body and said slide tracks;

at least one fluid containing means for storing fluid to be used for actuating said fluid actuated device;

conduit means connecting said fluid containing means to said fluid actuated device; and

valve means interposed between said fluid containing means and said fluid actuated device, said valve means actuable to effect a selective open path between said fluid containing means and said fluid actuated device so that said fluid actuated device can operate to move said body and said slide tracks relative to each other for effectuating said distance.

19. The system of claim 18, wherein said valve means is responsive to at least the weight of said rider supported by said body for moving said body and said slide tracks relative to each other to vary said distance separating said body and said slide tracks, thereby providing the optimal riding comfort for said rider.

20. The system of claim 18, wherein said fluid actuated device comprises a gas or air actuated cylinder; and

wherein said fluid containing means stores compressed air or gas for usage by said fluid actuated devices.

21. The system of claim 18, wherein said fluid actuated device comprises a hydraulic cylinder; and

wherein said fluid containing means stores hydraulic oil or other incompressible liquids for actuating said cylinder.

22. The system of claim 18, further comprising:

sensor means positioned relative to said body for determining the forces acting on said slide tracks including at least the weight of said rider; and

processor means communicatively connected to said sensor means for receiving signals therefrom representative of at least the forces acting on said slide tracks in reaction to the weight of said rider, said processor means further communicatively connected to said valve means so that, in receipt of the signals from said sensor means, said processor means sends a command signal to said valve means to selectively provide fluid to said fluid actuated devices to effectuate said distance.

23. The system of claim 18, further comprising:

switch means situated on said body to be within easy reach of said rider that enables said rider to selectively actuate said fluid actuated device to adjust said distance.

24. The system of claim 18, further comprising:

means located on said snowmobile for sensing the weight of said rider and using said sensed weight as a reference for providing fluid to said fluid actuated device to automatically adjust said distance.

25. The system of claim 18, wherein said snowmobile has at least one ski, said system further comprising:

at least one fluid actuated device connecting said ski to said body, said fluid actuated device being effective for stabilizing the movement of said ski.

26. The system of claim 18, further comprising:

at least two fluid actuated devices operatively interposed between said body and said slide tracks.

27. A snowmobile comprising:

a body for supporting at least one rider;

a frame to which slide tracks are mounted for supporting said body;

a belt mounted about said slide tracks and driven to provide movement for said snowmobile; and

means connecting said body to said frame for substantially insulating said snowmobile body from forces acting on said slide tracks as a reaction to at least the weight of said rider when said snowmobile is in movement, said means including at least one fluid actuated device adjustable at any time to substantially insulate said snowmobile body from said forces acting on said slide tracks to thereby maintain an optimal cushioned ride for said rider.

28. The snowmobile of claim 27, wherein said fluid actuated device comprises a cylinder which movement is driven by fluid.

29. The snowmobile of claim 27, further comprising:

a fluid store which volume is varied by the amount of fluid fed thereto communicatively connected to said fluid actuated device for supplying fluid thereto.

30. The snowmobile of claim 27, further comprising:

valve means interposed between said fluid store and said fluid actuated device for controlling the amount of fluid provided to each of said fluid actuated devices.

31. The snowmobile of claim 27, further comprising:

means for sensing the forces acting on said slide tracks in reaction to at least the weight of said rider to automatically adjust said fluid actuated devices to insulate said snowmobile body from said forces acting on said slide tracks.

32. The system of claim 27, further comprising:

sensor means responsive to the weight of said rider supported by said body and the forces acting on said slide tracks in reaction to at least said weight and the movement of said snowmobile;

processor means communicatively connected to said sensor means for receiving signals therefrom representative of at least the forces acting on said slide tracks and the weight of said rider, said processor means further communicatively connected to said fluid actuated device so that, in receipt of the signals from said sensor means, said processor means sends a command signal to adjust said fluid actuated device to maintain said optimal cushioned ride for said rider.

33. The snowmobile of claim 27, wherein said fluid actuated device is actuated to raise or lower said body relative to said slide tracks.

34. The snowmobile of claim 27, further comprising:

means responsive to activation by said rider for controllably adjusting said fluid actuated device.

35. The snowmobile of claim 27, further comprising:

means for automatically adjusting said fluid actuated device to maintain said optimal cushioned ride for said rider without any interaction on the part of said rider.

36. The snowmobile of claim 27, further comprising:

a pair of skis movably attached to said body for providing said rider controlled steered movement of said snowmobile, at least one fluid actuated cylinder connecting each of said skis to said body, said at least one fluid actuated device adjustable at any time to effect a stabilized movement for said one ski independent of the other of said skis.

37. The snowmobile of claim 27, further is equipped with an antilock braking system for enhancing the traction and movement of said snowmobile.

38. In a snowmobile having a body for supporting at least one rider, a frame to which slide tracks are mounted for supporting said body, a belt mounted about said slide tracks and driven to provide movement for said snowmobile, a method of providing a cushioned ride for at least one rider of said snowmobile comprising the steps of:

connecting said body to said frame by means of at least one fluid actuated device; and

effecting said fluid actuated device to act as an independent insulator by varying the stiffness of said fluid actuated device to substantially insulate said snowmobile body from movements of said frame in reaction to forces acting on said slide tracks when said snowmobile is in movement to thereby maintain an optimal cushioned ride for said rider.

39. The method of claim 38, wherein said fluid actuated device comprises a cylinder which movement is driven by fluid.

40. The method of claim 38, further comprising the step of:

communicatively connecting a fluid store to said fluid actuated device for supplying fluid thereto.

41. The method of claim 40, further comprising the step of:

interposing valve means between said fluid store and said fluid actuated device for controlling the amount of fluid provided to said fluid actuated device.

42. The method of claim 38, further comprising the steps of:

sensing the weight of said rider on said body; and

automatically adjusting the stiffness of said fluid actuated device by varying the amount of fluid supplied thereto to insulate said body from forces acting on said

slide tracks resulting from at least the weight of said rider to thereby provide said optimal cushioned ride for said rider.

43. The method of claim 38, wherein said snowmobile further includes a sensor means and a processor means, the method further comprising the steps of:

utilizing said sensor means to sense at least the weight of said rider supported by said body and the forces acting on said slide tracks in reaction to said weight and the movement of said snowmobile; and

communicatively connecting said processor means to said sensor means for receiving signals therefrom representative of at least the weight of said ride;

communicatively connecting said processor means to said fluid actuated device; and

effecting said processor means, when in receipt of the signals from said sensor means, to send a command signal to vary the stiffness of said fluid actuated device to maintain said optimal cushioned ride for said rider.

44. The method of claim 38, wherein said fluid actuated device is actuated to raise or lower said body relative to said slide tracks.

45. The method of claim 38, further comprising the step of:

adjusting said fluid actuated device using means responsive to activation by said rider.

46. The method of claim 38, further comprising:

adjusting said fluid actuated device using self adjusting means to maintain said optimal cushioned ride for said rider without any interaction on the part of said rider.

47. The method of claim 38, further comprising the step of:

movably attaching a pair of skis to said body for providing said rider controlled steered movement of said snowmobile;

connecting each of said skis by at least one fluid actuated cylinder to said body; and

adjusting said at least one fluid actuated device at any time to effect a stabilized movement for said one ski independent of the other of said skis.

48. For a vehicle having a body onto which at least one rider rides, a frame to which slide tracks are mounted, a belt mounted about said slide tracks and driven to provide movement for said vehicle, a method of improving the ride of said vehicle comprising the steps of:

connecting said frame to said body by at least one fluid actuated device; and

varying the stiffness of said fluid actuated device at any time for substantially insulating said vehicle body from forces acting on said frame when said vehicle is in movement to thereby effecting an optimal cushioned ride for said rider.

49. The method of claim 48, further comprising the steps of:

movably attaching a pair of skis to said vehicle body for providing said rider controlled steered movement of said vehicle;

coupling each of said skis to said body by at least one fluid actuated cylinder; and

adjusting said at least one fluid actuated device at any time to effect a stabilized movement for said one ski independent of the other of said skis.

50. The method of claim 48, wherein said fluid actuated device comprises a fluid driven cylinder, and wherein said vehicle further includes a fluid store and valve means, further comprising the steps of:

communicatively connecting said fluid store to said fluid actuated devices;

interposing said valve means between said fluid store and said fluid actuated device; and

controlling the amount of fluid supplied to said fluid actuated device to regulate the stiffness of said fluid actuated device to thereby provide the optimal cushioned ride for said rider.

51. The method of claim 48, further comprising the steps of:

sensing the weight of said rider riding on said body; and

moving said body and said slide tracks relative to each other to provide the optimal cushioned ride for said rider in response to the sensed weight.

52. The method of claim 48, further comprising the steps of:

sensing the forces acting on said frame relative to said body; and

controlling said fluid actuated device in response to the sensed forces to variably adjust the distance separating said frame and said body to effect said cushioned ride for said rider.

53. In a snowmobile having a body onto which at least one rider rides, said body being coupled to a frame supported by slide tracks, a method of maintaining a distance between said body and said slide tracks to provide optimal riding comfort for said rider, comprising the steps of:

interposing at least one fluid actuated device between said body and said slide tracks;

provisioning at least one fluid store means for storing fluid to be used for actuating said fluid actuated device;

connecting said fluid store means to said fluid actuated device; and

interposing valve means between said fluid store means and said fluid actuated device; and

actuating said valve means to effect a selective open path between said fluid store means and said fluid actuated device so that said fluid actuated device can

operate to move said body and said slide tracks relative to each other for effectuating said distance.

54. The method of claim 53, further comprising the steps of:

sensing at least the weight of said rider; and

actuating said valve means in response to at least the weight of said rider for moving said body and said slide tracks relative to each other to vary said distance separating said body and said slide tracks.

55. The method of claim 53, wherein said snowmobile has at least one ski, said method further comprising the step of:

connecting said ski to said body by at least one fluid actuated device for stabilizing the movement of said ski.

56. A snowmobile comprising:

a body onto which at least one rider rides;

a frame to which slide tracks are mounted;

a belt mounted about said slide tracks and driven by drive means to provide movement for said vehicle;

a drive disc coupled to said drive means;

a brake pad mounted relative to said drive disc for braking the motion of said drive means to stop the movement of said belt; and

an antilock braking system communicatively coupled to said brake pad and said drive means for controlling the braking action of said brake pad and to prevent the locking of said brake pad to said drive disc.

57. The snowmobile of claim 56, further comprising:

a suspension system including at least one fluid actuated device operatively connecting said frame to said body adjustable at any time for substantially insulating said vehicle body from forces acting on said frame when said vehicle is in movement to thereby effecting an optimal cushioned ride for said rider.